

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

CHRIMAR SYSTEMS, INC., <i>et al.</i>, Plaintiffs, v. ALCATEL-LUCENT, INC., <i>et al.</i>, Defendants.	Case No. 6:13-CV-880-JDL
CHRIMAR SYSTEMS, INC., <i>et al.</i>, Plaintiffs, v. AMX, LLC, Defendant.	Case No. 6:13-CV-881-JDL
CHRIMAR SYSTEMS, INC., <i>et al.</i>, Plaintiffs, v. GRANDSTREAM NETWORKS, INC., Defendant.	Case No. 6:13-CV-882-JDL
CHRIMAR SYSTEMS, INC., <i>et al.</i>, Plaintiffs, v. SAMSUNG ELECTRONICS, CO., LTD. <i>et al.</i>, Defendants.	Case No. 6:13-CV-883-JDL

DEFENDANTS' RESPONSIVE CLAIM CONSTRUCTION BRIEF

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Exhibit 2	McGraw-Hill Data Communications Dictionary
Exhibit 3	IEEE Standard Dictionary of Electrical and Electronics Terms (Third Edition)
Exhibit 4	McGraw-Hill Electronics Dictionary (Sixth Edition)
Exhibit 5	US Patent 6,650,622 (<i>Austerman, III et al.</i>)
Exhibit 6	US Patent 7,457,250 (<i>Austerman, III et al.</i>)
Exhibit 7	Random House Unabridged Dictionary (Special Second Edition)

Defendants Alcatel-Lucent USA, Inc., Alcatel-Lucent Holdings, Inc., AMX LLC, Grandstream Networks, Inc., Samsung Telecommunications America, LLC and Samsung Electronics, Co., Ltd. (collectively, “Defendants”) hereby submit their responsive claim construction brief regarding the remaining disputed claim phrases of U.S. Patent No. 8,155,012 (“the ’012 patent”).

I. INTRODUCTION

The ’012 patent identifies controlling the total cost of ownership (“TCO”) of the office computer as “one of the largest problems in managing the computerized office environment.” ’012 patent at 1:28–31. To solve this problem, the ’012 patent describes adapting an existing computer network with remote and central modules so that remotely located equipment on that network can be managed, tracked, and identified. ’012 patent at Abstract; 1:23–26; 1:67–2:2.

Asserted independent claims 31 and 67 are directed at an adapted piece of Ethernet data terminal equipment and a method for adapting a piece of terminal equipment, respectively:

31. An adapted piece of Ethernet data terminal equipment comprising:

an Ethernet connector comprising a plurality of contacts; and

at least one path coupled across selected contacts, the selected contacts comprising at least one of the plurality of contacts of the Ethernet connector and at least another one of the plurality of contacts of the Ethernet connector,

wherein distinguishing information about the piece of Ethernet data terminal equipment is associated to impedance within the at least one path.

67. A method for adapting a piece of terminal equipment, the piece of terminal equipment having an Ethernet connector, the method comprising:

coupling at least one path across specific contacts of the Ethernet connector, the at least one path permits use of the specific contacts for Ethernet communication, the Ethernet connector comprising the contact 1 through the contact 8, the specific contacts of the Ethernet connector comprising at least one of the contacts of the Ethernet connector and at least another one of the contacts of the Ethernet connector; and

arranging impedance within the at least one path to distinguish the piece of terminal equipment.

'012 patent at claims 31, 67 (emphasis added for the remaining disputed claim phrases).

One of the principal disputes between the parties is whether “impedance” as used in claims 31 and 67 should be construed to be an opposition to alternating current (“AC”) – a requirement that is expressly disclosed in the '012 patent. As indicated by IEEE dictionary definitions and further confirmed by the embodiments disclosed in the '012 patent, “impedance” is an electrical characteristic related to AC. The term “impedance” is used in connection with AC signals because impedance includes a “reactance” component that is a function of the frequency of the AC signal (*i.e.*, the number of cycles per second in which the signal alternates).

The '012 patent attempts to solve the TCO problem by attaching a communication device to remotely located equipment that “impresses a low frequency signal on the pre-existing data lines” of that equipment. '012 patent at Abstract. That low frequency signal is necessarily AC because DC does not have a frequency component. The low frequency (AC) signal is used to provide the “distinguishing” information about the piece of remotely located equipment—such as a unique identification number—that allows the system to manage, track, and identify that piece of equipment. '012 patent at 6:7–13; *see also* 3:18-25.

II. CLAIM TERMS IN DISPUTE

A. “distinguishing information about the piece of Ethernet data terminal equipment” / “to distinguish the piece of terminal equipment”

Chrimar’s Position	Defendants’ Position
“information to distinguish the piece of Ethernet data terminal equipment from at least one other piece of Ethernet data terminal equipment” (claims 31 and 50)	“information to differentiate each piece of Ethernet data terminal equipment from each other piece of Ethernet data terminal equipment” (claims 31 and 50)
“to distinguish the piece of terminal equipment	“to differentiate each piece of terminal

having an Ethernet connector from at least one other piece of terminal equipment having an Ethernet connector” (claims 67 and 72)	equipment from each other piece of terminal equipment” (claims 67 and 72)
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For the reasons stated in Defendants’ Early Claim Construction briefing (*see* Dkt. Nos. 55, 58 (Case No. 6:13-CV-883-JDL)) and at the September 3, 2014 Early Claim Construction hearing, which are incorporated herein by reference, Defendants’ construction should be adopted.

B. “impedance”

Chrimar’s Position	Defendants’ Position
“Plain and ordinary meaning. No construction necessary”	“the resistance to the flow of alternating current in a circuit” <i>Alternatively:</i> ¹ “the opposition to the flow of alternating current”

Not only does Chrimar fail to provide any construction or clarity for a term that cannot, for example, be readily understood by a jury,² Chrimar also improperly leaves a claim construction issue to be disputed by the experts later in this case.³ In contrast, Defendants’

¹ Chrimar alleges that Defendants’ construction is imprecise because it uses the term “resistance,” and is redundant because it includes the phrase “in a circuit.” *See* Pls.’ Opening Br. on Claim Construction at 9-10. In this context, “resistance” means “opposition” or a force counteracting the flow of the alternating current. Accordingly, Defendants would not object to construing “impedance” as “the opposition to the flow of alternating current.”

² A fundamental purpose of claim construction is to provide a construction that is helpful to the fact finder. *See, e.g., Funai Elec. Co., Ltd. v. Daewoo Elecs. Corp.*, 616 F.3d 1357, 1366 (Fed. Cir. 2010) (stating that in construing claims, “[t]he criterion is whether the explanation aids the court and the jury in understanding the term as it is used in the claimed invention”).

³ *See, e.g., O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1361 (Fed. Cir. 2008) (“A determination that a claim term ‘needs no construction’ or has the ‘plain and ordinary meaning’ may be inadequate when a term has more than one ‘ordinary’ meaning or when reliance on a term’s ‘ordinary’ meaning does not resolve the parties’ dispute.”). As this term is central to Chrimar’s alleged infringement of all claims and, therefore, potentially case dispositive, it will be central to the parties’ expert reports. *See, e.g.,* Notice of Compliance with Court’s Standing Order Regarding Letter Br. and Briefing Procedures for Early *Markman*

construction provides clarity and focuses the fact finder on the characteristic of “impedance” that is an important and case dispositive issue in this case. Defendants’ construction also follows the canons of construction, and starts with the understanding of one of ordinary skill in the art, then substantiates and confirms that understanding with the intrinsic evidence.

1. According to the intrinsic record the claimed “impedance” must have an alternating current characteristic.

As previously detailed, the ’012 patent addresses a very specific problem—how to manage, track, and identify remotely located electronic equipment on a network, for example, an employee’s computer. ’012 patent at 1:23–26; *see also* Defendants’ Combined Motion for Summary Judgment and Claim Construction at 1 (Dkt. No. 68, Case No. 6:13-CV-883-JDL). In the ’012 patent, this is achieved by information regarding the equipment being carried by a signal—with this “signal” described in each of the preferred embodiments as having a “frequency” and/or being “modulated”—an AC signal.⁴ *See, e.g.*, ’012 patent at 12:9–12 (“To ensure that the added low frequency signal...”), 9:24-30 (“current... is modulated... then decoded....”) (emphasis added). This AC signal in conjunction with impedance is the information used to manage, track, and identify the electronic equipment on the network. *See, e.g.*, ’012 patent at 6:7-13, 8:49-57; 10:13-30; 11:62-12:9.

Hearing / Summary Judgment of Noninfringement Requests, (Dkt. No. 55, 6:13-CV-883-JDL) Ex. A at 4 (June 9, 2014) (noting why the “impedance” limitation is potentially case dispositive).

⁴ “Modulation” can only refer to an AC signal because it is referring to manipulating a wave. “Signal modulation” is a term of art and an AC-only technique. It is defined as “a process whereby certain characteristics of a wave, often called the carrier, are varied or selected in accordance with a modulating function.” *See* The IEEE Dictionary (7th ed. 2000) (Exh. 1 at 703). The term has no meaning when applied to a DC signal because a DC signal (*i.e.*, a steady-state, unchanging signal) cannot be a wave.

The crux of the dispute between the parties is whether, in light of the intrinsic record, the AC characteristic of the claimed “impedance” limitation (*i.e.*, “reactance”) can be ignored.⁵ As a starting point, the parties agree that the mathematical equation for impedance is:

$$Z \text{ (impedance)} = R \text{ (resistance)} + jX \text{ (reactance)}$$

See Baxter Decl. (July 9, 2014) at ¶ 6; Defendants’ Claim Construction Tutorial at slide 16 (submitted September 18, 2014). Impedance, pursuant to the equation and understanding in the art, is the combination of both resistance and reactance.⁶ *Id.*

A verbal definition for “impedance,” and the foundation for Defendants’ construction, is provided by the IEEE Dictionary (2000):

(7) **(broadband local area networks)** A measure of the complex resistive and reactive attributes of a component in an alternating-current circuit. (LM/C) 802.7-1989r
(8) The resistance to the flow of alternating current in a circuit. (C) 610.7-1995
 (9) (of a series reactor) The phasor sum of the reactance and effective resistance, expressed in ohms. (PE/TR) C57.16-1996

The IEEE Dictionary (7th ed., 2000) (Exh. 1 at 535). While one of multiple listed definitions from the IEEE Dictionary, Defendants propose the definition that: (1) is confirmed by the intrinsic record; (2) provides further clarity/granularity regarding “impedance” in this case (*i.e.*,

⁵ Without actually giving a construction, Chrimar argues in its brief that the “plain and ordinary” meaning of impedance “allows the impedance to be for opposition to flow of current, whether AC or DC current, in a path.” See Pls.’ Opening Br. on Claim Construction at 7 (emphasis added).

⁶ Resistance is agnostic as to the circuit (*i.e.*, AC vs. DC). Reactance is an AC characteristic. Reactance is the opposition to the flow of electricity due to a circuit’s inductance (“L”) and capacitance (“C”), both of which are frequency dependent. See Defendants’ Claim Construction Tutorial at slides 16–21. As disclosed in the ’012 specification, the circuits at issue include inductors (*e.g.*, transformers) and capacitors, thus invoking the concept of “impedance.” See, *e.g.*, ’012 patent at 8:49-57.

related to AC signals⁷ as opposed to DC signals); and (3) would likely be most helpful (*e.g.*, easily understood) to a fact finder.

a. The specification expressly discloses an AC signal and that the DC signal is blocked.

Defendants' construction is confirmed by the specification's use of an AC signal to transmit information, while blocking DC. The term "impedance" occurs only five times in the specification.⁸ '012 patent at 8:49-57; 9:65-10:3; 14:62-64. The first two references to "impedance" in the specification relate to how "the encoded signal" is created:

the receive data lines to PC 3A. Although the encoded signal
 50 in the present embodiment transmits the encoded signal from
 the remote module 16a, it is within the scope of the invention
 to source current from the central module and alter the flow of
current from within the remote module 16a by changing the
impedance of a circuit connected across the data communi-
 55 cation link 2A. Examples of such circuits include an RC
 network connected directly to the data link 2A and reflecting
 an impedance change across an isolation transformer.
 Referring again to FIG. 6, the encoded signal is received in
 the central module 15a by signal receiver 6. Within central

'012 patent at 8:49-60. In pertinent part, the specification states that the "encoded signal" can be provided by "alter[ing] the flow of current" (*i.e.*, AC). AC is altered by "reflecting an impedance change across an isolation transformer." '012 patent at 8:56-57 (emphasis added). The relationship of impedance to AC signals is substantiated by the patent's disclosure of a

⁷ To note, definition no. 7, directed to "broadband local area networks" – which is the subject matter of the patent – also defines "impedance" "in an alternating-current circuit." Definition no. 8 was selected as Defendants believed it was more concise and focused on the characteristic at issue – as opposed to non-disputed attributes related to "resistive and reactive attributes."

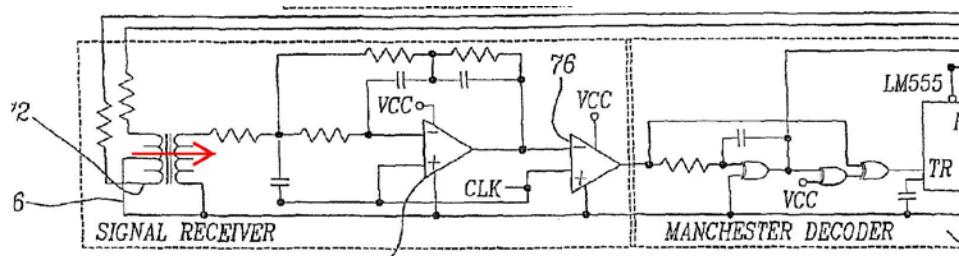
⁸ The prosecution history of the '012 patent provides no guidance as to the construction of the "impedance" limitation.

“transformer,” because a transformer only permits AC signals to propagate.⁹ Accordingly, the claimed “impedance” as disclosed in this passage, must be in conjunction with an AC signal.

Defendants’ construction is further confirmed (*i.e.*, that the “impedance” is used in conjunction with an AC signal) by how the specification uses the encoded signal (as created by impedance) in the related embodiment. *See* ’012 patent at 8:58-59 (the embodiment of Fig. 6). In particular, the specification states that “the encoded signal” described in the excerpt above “is received in the central module 15a by signal receiver 6.” *Id.* In the signal receiver, the encoded signal must pass through transformer 72 before being output to the decoder:

Referring again to FIG. 6, the encoded signal is received in the central module 15a by signal receiver 6. Within central module 15a, high pass filter 62 prevents the encoded signal from being conducted through the data lines to hub 1. The signal couples through transformer 72 to low pass active filter 74 which filters out normal network communications signals. The filtered signal is squared-up by comparator 76 and outputted to Manchester decoder 5. The decoded signal is inputted to firmware kernel 4 which evaluates the information. If

’012 patent at 8:61-65. This is further illustrated in Fig. 6:



’012 patent at Fig. 6 (excerpt, annotated with red arrow showing path of encoded signal).

⁹ This is a basic principle of a transformer. *See, e.g.*, IEEE Dictionary (2000) (Exh. 1 at 1201) (“Transformer: (1) A device, which, when used, will raise or lower the voltage of *alternating current* of the original source”). *See, e.g.*, ’012 patent at 5:25-28; 9:63-10:17; Fig. 6 at 72; Fig. 10 at 72, 124.

As discussed above, only AC signals can pass through transformer (72). Thus, the encoded signal must be AC, and the disclosed impedance is the resistance or opposition to the flow of that AC.

The next two disclosures of “impedance” in the specification further confirm the requirement that “impedance” be the opposition to AC. In describing Fig. 10, the specification at 10:1-3 states that the “primary impedance” is controlled by the processor (122) and that the “current” flows through an “isolation transformer (124)”:

zener diode 114. The return current flowing out of zener diode 114 and the circuit ICs, flows into the secondary winding center-tap of isolation transformer 124. The current splits between the windings with the reflected primary impedance controlling the magnitude of the current that flows in each winding. The primary impedance is controlled by processor 122, the exclusive OR gates 120 and 121, and the two 10 k resistors 126 and 127. A high logic level output from exclu-

'012 patent at 9:63-10:3. Indeed, the specification details that the “current” signal must pass through two transformers: the first, isolation transformer 124 (located in the remote module), as detailed in the passage above, and later the second, transformer 72 (located in the central module) – the same type of transformer discussed with respect to Fig. 6 (above) – before reaching the decoder (5):

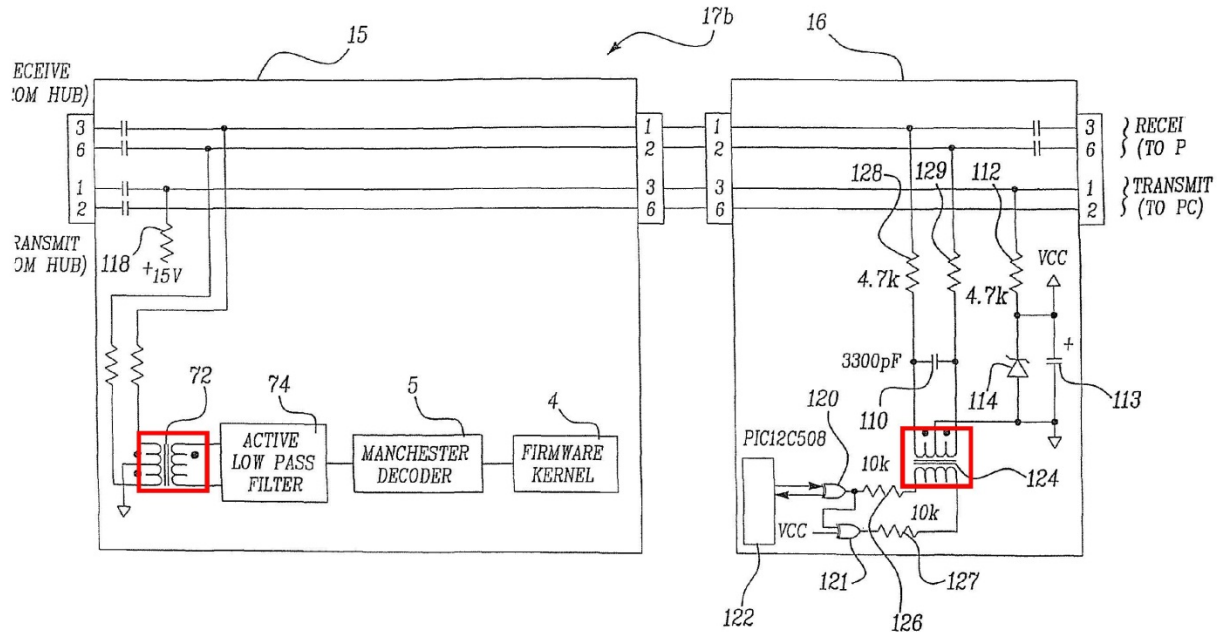


Fig-10

'012 patent at Fig. 10 (annotated); *see also* '012 patent at 10:1-30; 10:23-25 (“Within central module 15b, the modulated current is reflected from the primary to the secondary of isolation transformer 72.”). Thus, the specification again confirms that the claimed “impedance” must be in conjunction with an AC signal. This is true because a DC signal would not be able to propagate across the disclosed transformers.¹⁰

b. Chrimar’s citations to the specification regarding DC are either unrelated to the claimed “impedance” or support Defendants’ construction.

As discussed above, although Chrimar provides no construction, it argues that the “plain and ordinary meaning” of the claimed “impedance” limitation can be so broad as to “allow” for “AC or DC current” (*e.g.*, that it can be DC only). *See* Pls.’ Opening Br. on Claim Construction at 7 (emphasis added). Chrimar’s argument is provided with little (if any) substantive discussion

¹⁰ The final and fifth use of the term impedance provides no additional clarity as to any characteristics of the claimed “impedance.” *See* '012 patent at 14:62-64 (“The signal receiver 230 provides a balanced impedance on the serial bus for receiving the serial stream from the sender tag 202.”).

and relies primarily on four citations to the specification. *See* Pls.’ Opening Br. on Claim Construction at 9; Baxter Decl. (July 9, 2014) at ¶ 24.

Chrimar’s citations, however, are either unrelated to the claimed “impedance” limitation or contradict Chrimar’s argument. For example, Chrimar cites to the ’012 patent at 5:33-40 and 5:40-41, which describes an unclaimed power supply in the “central module” that provides DC *power* to the “remote module.” *See, e.g.*, ’012 patent at 5:33-52. While the power supply sources DC current, its function is to transmit *power* to multiple remote modules or to charge a battery, and it is completely unrelated to the modulated current signal generated by “impedance.” *See* ’012 patent at 5:43-48 (“Although the present embodiment sources current for the immediate power needs of the remote module, it is also within the scope of the invention to supply current to charge a battery, capacitor bank, or other energy storage device that powers the remote module.”).

Chrimar’s remaining citations contradict its construction and support Defendants’ position. Chrimar cites to the ’012 patent at 7:17-21; 7:40-42; and 7:48-50, which refer to the embodiment of Figures 6 and 8. *See* Pls.’ Opening Br. on Claim Construction at 9. However, each of these citations discloses the use of high-pass filters to *block* DC signals from entering the Hub and PC, such that any DC signal is isolated from modulated signals (*i.e.*, AC signals). *See, e.g.*, ’012 patent at 7:17-19; 7:40-42; 7:48-50. Even Chrimar’s expert notes that these citations describe the blocking of DC signals. *See* Baxter Decl. (July 9, 2014) at ¶ 24. Therefore, this supports Defendants’ construction – that the claimed “impedance” must be in relation to an AC signal because the DC signal is blocked. Accordingly, the specification fails to support Chrimar’s argument and rather supports Defendants’ position.

c. Any construction of “impedance” must be used in conjunction with an AC signal, or the disclosed embodiments are excluded.

Chrimar admits that a construction that would exclude a preferred embodiment is rarely, if ever, correct. *See* Pls.’ Opening Br. on Claim Construction at 9 (citing *Vitrionics Corp. v. Conceptronic, Inc.* 90 F.3d 1576, 1583 (Fed. Cir. 1996)). As discussed above, an AC signal must be included in a construction of “impedance” because an AC signal is used in each of the disclosed embodiments. Chrimar argues that the claimed “impedance” limitation “allows the impedance to be for opposition to flow of current, whether AC or DC current” (*i.e.*, that “impedance” can mean the opposition to DC current alone). *See* Pls.’ Opening Br. on Claim Construction at 7, 9. However, the disclosed embodiments would be inoperable if only a DC signal were used – as it is expressly blocked.¹¹ Further, such a construction (*i.e.*, AC *or* DC) is unsupported by the specification.

Stated differently, any construction of “impedance” must have an AC characteristic. In arguing for a meaning “which allows impedance to be for opposing DC current flow (*see* Pls.’ Opening Br. on Claim Construction at 9), Chrimar states that the AC characteristic of the impedance equation can be equal to zero (*i.e.*, for the equation $Z = R + jX$, “[i]n the DC case, the reactance X is equal to zero and $Z=R$.”). *See* Baxter Decl. (July 9, 2014) at ¶ 23. Contrary to Chrimar’s argument, there is no such embodiment or disclosure in the ’012 patent. Rather, reactance (*i.e.*, the AC characteristic of impedance) is highlighted in the disclosed

¹¹ *See Nat’l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1195-96 (Fed. Cir. 1999) (“The enablement requirement ensures that the public knowledge is enriched by the patent specification to a degree at least commensurate with the scope of the claims. The scope of the claims must be less than or equal to the scope of the enablement.”).

embodiments¹² and, thus, X cannot be zero. Moreover, if the patentee had intended to claim the hypothetical “DC case” proposed by Chrimar’s expert, where $Z=R$, then the claims could have specified resistance (“R”), instead of impedance (“Z”). Indeed, as is understood in the art, the patentee uses the term “impedance” in connection with circuit components, such as capacitors, that add a “reactive” opposition to current (*i.e.*, opposition to AC signals). *See* ’012 patent at 8:49-57; 10:1-22. Accordingly, the claims of the ’012 patent must have an AC characteristic to avoid excluding the disclosed embodiments.

d. The principles of claim differentiation support Defendants’ position.

The plain language of the claims contradicts Chrimar’s claim differentiation argument. *See* Pls.’ Opening Br. on Claim Construction at 8-9. Specifically, Chrimar misreads dependent claims 82, 85, and 86 and fails to distinguish when the claims are referring to “impedance” as opposed to the “first” and “second conditions.” In particular, claim 82 requires:

82. The method according to claim 67 wherein the arranging impedance within the at least one path comprises arranging impedance within the at least one path to have a first impedance for a first condition applied to the specific contacts followed by a second impedance for a second condition applied to the specific contacts.

Claim 82 clearly differentiates between the “impedance[s]” and the “condition[s].” While there may be a relationship between the two (*e.g.*, a “first impedance” for “a first condition”) the impedance and the conditions are separate and distinct. Dependent claims 85 and 86 are similarly directed to the “conditions,” not the “impedance”:

¹² In the ’012 specification, the reactance properties of inductors and capacitors are used to modulate a signal. *See, e.g.*, ’012 patent at 8:49-57. Thus, the reactance (“X”) of the circuit must be greater than zero for the invention to function.

85. The method according to claim **82** wherein the first and second conditions applied to the specific contacts are current conditions.

86. The method according to claim **85** wherein the current conditions are DC current conditions.

Accordingly, the “conditions” are described to control the impedance of the circuit, but do not describe the characteristics of impedance itself.

This understanding is confirmed by the patent specification. In the description of Fig. 10, the specification discloses two logic conditions—“logic level high and low”—originating from the processor and associated circuitry. *See* ’012 patent at 10:9-13. These logic conditions are directly related to the direction of the flow of the current – and control the impedance – which in turn controls the magnitude of the current. *See* ’012 patent at 10:1-3 (“The primary impedance is controlled by processor 122”); ’012 patent at 9:65-10:1 (“The current splits between the windings with the reflected primary impedance controlling the magnitude of the current that flows in each winding.”) (emphasis added). Further, the logic conditions can be either logic level high or low, which affects the direction of the current. ’012 patent at 10:9-13 (emphasis added) (“The direction of the current flowing through the primary changes as the output of exclusive OR 120 alternates between a logic level high and low in response to the Manchester encoded stream from processor 122.”) (emphasis added). Therefore, this creates a relationship where there exists a first impedance/current for a first logic condition (*e.g.*, high) and a second impedance/current for a second logic condition (*e.g.*, low). Finally, because the logic levels are either only high or low and, thus, DC—these are DC (control) “conditions” related to the “first” and “second” impedance. In other words, DC conditions (*e.g.*, high and low) are described to control the impedance of a circuit used to generate an AC signal, as opposed to suggesting that impedance is an electrical characteristic applicable to the DC control circuit.

Based on a reasonable reading of the claims and the specification, dependent claims 82, 85, and 86 are directed to a different aspect of the claimed invention and provide no basis to require a reference to DC in the construction of “impedance.”¹³

2. The extrinsic evidence, as supported by the specification, confirms that “impedance” means the resistance/opposition to the flow of alternating current in a circuit.

Extrinsic evidence confirms Defendants’ proposed construction and is consistent with the clear disclosure of the specification. First, *The IEEE Dictionary*, from which Defendants’ construction was taken word-for-word, is consistent with the specification’s disclosure requiring “impedance” to be an opposition to AC. Indeed, the ’012 patent summary clearly states that information is communicated from a remote module to a central module “by impressing a low frequency signal on the wires of the cable.” ’012 patent at 3:22-25. The ’012 patent further describes that the low frequency AC signal can be generated by changing the impedance of a circuit in the remote module. *See* ’012 patent at 8:49-57. Chrimar cites to the *Dictionary of Communications Technology*; the *Encyclopedic Dictionary of Electronic Terms Oxford Concise Science Dictionary*; and U.S. Patent No. 7,821,753 as support for its misguided position that the claimed “impedance” encompasses DC current. Pls.’ Opening Br. on Claim Construction at 9. Chrimar’s definitions are unreliable and should be disregarded because they contradict the clear

¹³ Chrimar argues without explanation that claim 76 also requires a DC current used in conjunction with the claimed “impedance.” This argument is also unsupported. Claim 76 requires “arranging the impedance within the at least one path to draw DC current.” The plain language of the claim does not require the current to be drawn through the same path upon which the impedance is located. Indeed, as Defendants contend that “arranging the impedance within the at least one path” is indefinite, that term here provides no basis for a person of ordinary skill in the art, for example, to conclude whether the claim requires that: (1) impedance be on the same path, but with DC current drawn from a different source; (2) impedance be on the “at least one path” while the DC current is drawn through a different path; or (3) DC current traverse a portion of the “at least one path,” but be redirected such that it does not traverse the “impedance.” While any of these three are possible, what is clear from the specification (as discussed above) is that the “impedance” is used in conjunction with AC (*i.e.*, DC is blocked).

disclosure of the '012 patent that utilizes AC signals to convey information and requires blocking DC power signals. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1322-23 (Fed. Cir. 2005) (discussing that it is well established that extrinsic evidence cannot be used to contradict the intrinsic record of a patent).

Accordingly, the Court should adopt Defendants' construction of "impedance" as "the resistance to the flow of alternating current in a circuit" because it is the only proposed construction that is consistent with the intrinsic and extrinsic evidence.

C. "arranging impedance within the at least one path"

Chrimar's Position	Defendants' Position
"Plain and ordinary meaning"	Indefinite

As explained in Defendants' concurrently-filed Motion for Summary Judgment of Indefiniteness, the term "arranging impedance within the at least one path," as it appears in independent claim 67,¹⁴ is indefinite.

In its Opening Claim Construction brief, Chrimar contends that "arranging impedance within the at least one path—means just what it says, is readily comprehensible, and does not require construction." Pls.' Opening Br. on Claim Construction at 12. Yet, at no point in its brief does Chrimar articulate that meaning. Chrimar's infringement contentions are even less enlightening. In its contentions, Chrimar simply pastes a IEEE 802.3at "Test Report," presumably to show that Defendants' accused products comply with the PoE standards, and then writes, repeating the language of the claim: "The defendant practices a method for adapting a piece of terminal equipment, the piece of terminal equipment having an Ethernet connector, that

¹⁴ The only independent claim in which this phrase appears is claim 67. '012 Patent at cl. 67.

includes the step of arranging impedance within the at least one path to distinguish the piece of terminal equipment.” *See, e.g.*, Dkt No. 68-1 at 37-38, 51, & 56; Dkt. No. 68-6 at 10, 15, 20, 25, 30, 35, 40, 45 (Case No. 6:13-cv-883). As a result, at no point in this case – not in its complaint, not in its infringement contentions and not in its Claim Construction brief – has Chrimar ever identified what it understands “arranging impedance” to actually mean.

To the extent that Chrimar contends that the step of “arranging impedance” is practiced during the manufacture of the accused PoE devices, the Court should reject that interpretation of the claim because it is contradicted by the plain language of the claim and flatly inconsistent with the only disclosure of “arranging impedance” in the specification. *See* ’012 patent at 8:49-57.

First, any contention that impedance can be arranged during manufacture of the accused devices or at some other point in time before the products are in operation, makes no sense. Impedance does not exist in a vacuum, and it certainly does not exist absent a circuit. Indeed, while the specific definition of “impedance” is disputed, all parties agree that it is an inherent characteristic of a circuit and that it is mathematically derived from the circuit’s voltage and current (*i.e.*, Ohm’s law). Accordingly, if there is no circuit with voltage or current, there can be no “impedance” to “arrange.”

Second, a contention that the step of “arranging impedance” is practiced during the manufacture of the accused PoE devices is inconsistent with the plain language of the claim, which presupposes an operable “path” prior to arranging impedance. Specifically, claim 67 requires “arranging impedance within the at least one path.” The antecedent basis for the “at least one path” is defined earlier in the claim in the preceding limitations. Specifically, the “at least one path” must be a path “across specific contacts of the Ethernet connector” and must permit use of contact 1 through contact 8 of the Ethernet connector for Ethernet communication.

Because the “at least one path” must be in existence (and “permit Ethernet communications”) before impedance therein can be “arranged,” an allegation that the manufacturing process of the accused devices is the point at which impedance is arranged does not comport with the plain language of the claim.

Finally, the only disclosure of using “impedance” in any way in the specification requires altering an existing current. The only reference in the specification to a change in impedance states that “it is within the scope of the invention to source current from the central module and alter the flow of current from within the remote module 16a by changing the impedance of a circuit connected across the data communication link 2A.” ’012 patent at 8:51-55 (emphasis added).¹⁵ A construction of “arranging impedance” that would include the concept of altering impedance without an existing current would be contrary to the specification of the ’012 patent and should be rejected.

D. “terminal equipment” / “Ethernet data terminal equipment”

Chrimar’s Position	Defendants’ Position
“Plain and ordinary meaning”	“device at which data transmission originates or terminates [and that is capable of Ethernet communication]”

“Ethernet data terminal equipment” and “terminal equipment” are not used in the specification of the ’012 patent.¹⁶ However, “data terminal equipment” has a well-established

¹⁵ Chrimar’s claim differentiation argument misses the point. The issue is not whether “arranging impedance” means “varying impedance.” Such a construction would be equally indefinite for the reasons stated in Defendants’ Motion for Summary Judgment. Rather, the issue presented here is, even if we assume that a person of ordinary skill in the art would understand what it means to “arrange impedance,” whatever that action is construed to be, it is something that must occur on an existing circuit.

¹⁶ The ’012 patent does refer to a “computer terminal” at 11:9, which, according to claim 32, could be a piece of Ethernet data terminal equipment.

meaning in the field of art. *See, e.g.*, McGraw-Hill Data Communications Dictionary (1993) at 24 (Chrimar_Defs0000771) (Exh. 2); IEEE Std. Dictionary of Electrical and Electronics Terms (3rd. ed. 1984) at 226 (Chrimar_Defs0000767) (Exh. 3); and McGraw-Hill Electronics Dictionary (6th ed. 1997) at 110 (Chrimar_Defs0000774) (Exh. 4). The McGraw-Hill Data Communications Dictionary provides the following definition: a “device at which data transmission originates or terminates. May be a keyboard/display terminal, a printer, a computer, a communication controller, or any similar device.” Exh. 2 at 24; *see also* ’012 patent at claim 32 (“wherein the piece of Ethernet data terminal equipment is a personal computer”; use consistent with definition). Other dictionaries similarly define “data terminal equipment.” Exh. 3 at 226; Exh. 4 at 110. One of ordinary skill in the art reading the ’012 patent would have interpreted “data terminal equipment” in claim 31 to have the same meaning as reflected in these dictionaries. *See Phillips*, 415 F.3d at 1313 (“the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention”). That meaning is consistent with the description of the invention and there is nothing in the ’012 patent to suggest that the patentees intended to deviate from it. In the absence of constructions that reflect that ordinary meaning, a jury may be confused as to what additional limits “Ethernet data terminal equipment” and “terminal equipment” place on the claims.

For those reasons, Defendants’ proposed construction for “Ethernet data terminal equipment” tracks the well-established meaning of “data terminal equipment” and adds “that is capable of Ethernet communication” to reflect the addition of “Ethernet” as a modifier in the claim term. Defendants’ proposed construction for “terminal equipment” (claim 67) omits the additional clause out of deference to the lack of the specific “Ethernet” language; however, claim

67 already requires that “the at least one path permits use of the specific contacts for Ethernet communication.” ’012 patent at claim 67. Therefore, Defendants believe that the “terminal equipment” of claim 67 would also be required to be at least capable of Ethernet communication.

Chrimar argues that “terminal equipment” of claim 67 need not be data terminal equipment based on a claim differentiation argument with claim 106, which limits terminal equipment to Ethernet data terminal equipment. *See* Pls.’ Opening Br. on Claim Construction at 15. The difference between claim 106 and claim 67 is the requirement for a specific type of data transmission, namely Ethernet, in claim 106. ’012 patent at claim 106. To the extent Chrimar argues that “terminal equipment” does not have to be capable of data transmission, that argument should be rejected. “Terminal equipment” without the capability to transmit data is nonsensical, not disclosed, and completely inconsistent with the disclosures in the ’012 patent. *See, e.g.,* ’012 patent at Fig. 3; 4:41–53; 5:1–13; *see also Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1332 (Fed. Cir. 2009) (“[C]laim differentiation is a rule of thumb that does not trump the clear import of the specification.”).

In addition, Chrimar’s position seems to equate “terminal equipment” with any type of equipment, which is an error in light of how the patentees claimed “equipment” in related patents. In the ’622 patent, the patentees separately claimed “electronic equipment” (claim 1), a “piece of equipment” (claim 3) and “computer equipment” (claim 13). ’622 patent, claims (Exh. 5). Similarly, the patentees claimed “electronic equipment” (claim 1), a “piece of equipment” (claim 16), “Ethernet equipment” (claim 50), and “centralized network equipment” (claim 25) in the ’250 patent. ’250 patent, claims (Exh. 6). It is clear from these related patents that if the patentees intended to claim equipment generically, they would have. Instead, the ’012 patent requires “terminal equipment” and “Ethernet data terminal equipment.” Constructions of these

terms should reflect that they require more than a “piece of equipment” or “Ethernet equipment”—they require that equipment to be terminal equipment—devices at which data transmission originates or terminates.

E. “[wherein distinguishing information about the piece of Ethernet data terminal equipment] is associated to impedance within the at least one path”

Chrimar’s Position	Defendants’ Position
“Plain and ordinary meaning”	Indefinite In the alternative to a finding that the following terms are indefinite, Defendants propose that “ <i>distinguishing information about the piece of Ethernet data terminal equipment</i> ” and “ <i>impedance</i> ” as used in this phrase have the same meanings as in their individually proposed constructions.

The “wherein” clause of claim 31 includes the following three claim phrases, which have already been addressed in claim construction briefing:

- (1) “distinguishing information . . .” (*see* Dkt. Nos. 68, 71, Case No. 6:13-CV-883);
- (2) “Ethernet data terminal equipment” (*see supra* II.D); and
- (3) “impedance” (*see supra* II.B).

For the reasons cited therein, Defendants respectfully request that the Court adopt Defendants’ proposed constructions for those phrases.

The “wherein” clause as a whole, however, is indefinite. Whether an impedance in an accused device is associated with distinguishing information requires a comparison to some other unclaimed, undisclosed device. Moreover, the ’012 patent provides no basis for one of ordinary skill in the art to discern what particular impedance or impedance range should impart any basis for distinguishing. For these reasons, a person of ordinary skill would be unable to ascertain the scope of the “wherein” clause with reasonable certainty, and the clause is therefore indefinite.

Nautilus, Inc. v. Biosig Instruments, Inc., 134 S.Ct. 2120, 2124 (June 2, 2014). Defendants respectfully direct the Court’s attention to Defendants’ Motion for Summary Judgment of Indefiniteness, filed concurrently herewith, for a more detailed analysis of why the “wherein” clause is indefinite.

Chrimar dismissively concludes that the phrase “associated to impedance within the at least one path” does not require a construction because the words are “readily comprehensible.” Pls.’ Opening Br. on Claim Construction at 16. Tellingly, Chrimar made no attempt to provide context and clarity regarding this phrase from the intrinsic record, because it cannot. Defendants respectfully request that the Court reject Chrimar’s proposed non-construction for the “wherein” clause and hold that the clause is indefinite.

F. “A method for adapting a piece of terminal equipment” / “An adapted piece of Ethernet data terminal equipment”

Chrimar’s Position	Defendants’ Position
“Plain and ordinary meaning”	<p>These preambles are limiting and have their plain and ordinary meaning.</p> <p>Defendants propose that “<i>terminal equipment</i>” and “<i>Ethernet data terminal equipment</i>,” as used in these phrases have the same meanings as in their individually proposed constructions.</p>

According to the ’012 patent, equipment on prior art networks were not identifiable in ways that addressed the Total Cost of Ownership (TCO) problem. *See, e.g.*, ’012 patent at 1:23–65. In particular, the ’012 patent describes that remotely located office equipment, such as computers, were creating additional and unnecessary organizational costs because the assets could not be adequately managed, tracked, and identified. *Id.* The inventors proposed to solve the TCO problem by adapting equipment on existing networks. *See, e.g.*, ’012 patent at 1:30-32

(“[I]t is desirable to provide an identification system that is easily and inexpensively implemented in an existing network system.”); *see also* ’012 patent at 4:56-60.

The ’012 patent provides several examples by which computer equipment in an existing network is “adapted” (*i.e.*, modified) such that the asset is capable of being managed, tracked, and identified in accordance with the invention. For example, Figures 1 and 2 illustrate a network computer 3a adapted to include a remote module 16. *See* ’012 patent at 4:41-47. Similarly, Figures 19A and 22 illustrate a network computer 204a adapted to include ID sender tags 202 and decoder plug 206. *See* ’012 patent at 13:13-22. Once adapted with additional communication equipment (*e.g.*, remote module 16, sender ID tags 202, etc.), the network asset is capable of being managed, tracked, and identified. *See* ’012 patent at 16:44-56. Indeed, as set forth throughout the patent specification, the inventors address the Total Cost of Ownership (TCO) problem by taking existing network assets that are otherwise indistinguishable and adapting those assets to make them distinguishable from each other. *See, e.g.*, ’012 patent at 4:41-47. Chrimar’s position that the preambles of claims 31 and 67 are non-limiting, while legally incorrect, is ultimately an improper attempt to read out the “adapting” requirement and would undermine the entire purpose of the invention and shift away from the particular problem the inventors were seeking to address. *See* ’012 patent at 1:23-3:14. To read out the “adapting” preambles as limitations to the scope of the asserted claims undermines the entire purpose of the invention.

The “adapting” preambles should be construed as limiting because they provide meaning to the scope of the ’012 patent claims. *See, e.g., American Med. Sys., Inc. v. Biolitec, Inc.*, 618 F.3d 1354, 1358 (Fed. Cir. 2010) (“the preamble may be construed as limiting ‘if it recites essential structure or steps, or if it is necessary to give life, meaning, and vitality’ to the claim.”)

(citation omitted). Besides the title and the claims, the patentees explicitly used “adapt” three times in the specification—each is accompanied by a reference to an existing system:

1 & 2. “This invention is particularly adapted to be used with an existing Ethernet communications link” ’012 patent at Abstract; 3:35–37; and

3. “The communication system 15 and 16 described herein is particularly adapted to be easily implemented in conjunction with an existing computer network 17 while realizing minimal interference to the computer network.” ’012 patent at 4:56–50.

Those references and the specification’s descriptions of retrofitting existing networks make clear that “adapting” as used in the ’012 patent refers to modifying existing Ethernet data terminal equipment or terminal equipment. *See, e.g.*, ’012 patent at 10:49–12:1; *see also* Random House Compact Unabridged Dictionary (Special 2nd ed. 1996) at 22 (Chrimar_Defs0000781) (general definition for “adapt”: “to make suitable to requirements or conditions; adjust or modify fittingly”) (Exh. 7).

Every claim in the ’012 patent has (or depends from a claim that has) “adapting” or “adapted” in the preamble. *See generally* ’012 patent claims. The patentees did not claim any piece of Ethernet data terminal equipment in claim 31; they claimed an adapted piece of such equipment. Similarly, in claim 67, the patentees claimed a method for adapting a piece of terminal equipment—not a method of manufacturing a piece of terminal equipment. The importance of “adapting” as a limit to the claims is further illustrated by comparison—despite sharing a specification, the ’012 patent is the only one of its family to focus the issued claims on “adapting.” *See generally* U.S. Pat. No. 6,650,622 (“the ’622 patent”), claims (Exh. 5); and U.S. Pat. No. 7,457,250 (“the ’250 patent”), claims (Exh. 6).

In addition, the “adapting” preambles are limiting because they provide antecedent basis to other claim terms. *See, e.g., Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). In asserted independent claim 31, the preamble “[a]n adapted piece of

Ethernet data terminal equipment” provides antecedent basis for “the piece of Ethernet data terminal equipment” in the body of the claim. ’012 patent at claim 31. Similarly, the preamble “[a] method for adapting a piece of terminal equipment, the piece of terminal equipment having an Ethernet connector” provides antecedent basis to “the piece of terminal equipment” and “the Ethernet connector” in the body of independent claim 67. ’012 patent at claim 67. Reliance on the preambles for antecedent basis is further demonstrated by claim 98, which refers to “[t]he method of claim 67 further comprising physically connecting the adapted piece of terminal equipment to a network.” ’012 patent at claim 98 (emphasis added).

Chrimar conveniently ignores the preambles because the “adapted”/“adapting” terms limit the scope of the asserted claims. *See* Pls.’ Opening Br. on Claim Construction at 18–20. Chrimar’s attempt to erroneously broaden the claim scope to shoehorn their infringement argument onto originally manufactured pieces of identical equipment should be rejected. The “adapting” preambles should be construed as limiting because they provide meaning to the asserted claims that is not captured within the body of the claims, including by serving as an antecedent basis for other claim terms.

III. CONCLUSION

For at least the reasons stated herein, Chrimar’s proposed constructions should be rejected and Defendants’ constructions should be adopted.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3) on October 6, 2014.

/s/ Michael E. Jones